

of iodine from about 0.005 M to about 0.05 M as compared to iodine concentrations of about 0.10 M.

Applicants enclose herewith a Declaration Under 37 C.F.R. § 1.132 (hereinafter "the Declaration"), in which inventor Glenn McGall describes a number of experiments that demonstrate improved functional performance of nucleic acid arrays, where the arrays were prepared using oxidant solutions that contained 0.01 M to 0.10 M iodine.

In Section 4 of the Declaration, Dr. McGall states that the ability of nucleic acids arrays to serve as an analytical tool is affected by the purity of the synthesized nucleic acid sequence. Dr. McGall further states that it was previously believed that maximal performance for a nucleic acid array was achieved when sufficient iodine was present to oxidize all phosphite esters to phosphate esters, where the standard iodine concentration has been 0.10 M or greater. In contrast, Dr. McGall and his co-inventor have found that the functional performance of nucleic acid arrays is compromised when they are prepared using an iodine concentration of 0.10 M.

Section 5 of the Declaration describes two experiments that demonstrate improved functional performance for nucleic acid arrays when they were prepared with oxidant solutions containing 0.01 to 0.05 M iodine. In these experiments, nucleic acid arrays were prepared using conventional methods. A variety of iodine concentrations ranging from 0.01 M to 0.05 M were used and compared with the conventional 0.10 M iodine concentration. The amount of target sequence hybridized to the probe sequences in the array was measured by fluorescence intensity. The fluorescence intensity increased when the iodine concentration was lowered from 0.10 M to concentrations ranging from 0.01 M to 0.05 M, indicating that more target sequence hybridized to the array and thus demonstrating that the functional performance of the arrays has improved.

The data presented in the Declaration are supportive of unexpected results that were obtained for the majority of the claimed range. Moreover, based on the trends exhibited by the data, one of ordinary skill in the art would expect that the use of iodine concentrations over the entire range from about 0.005 M to about 0.01 M would likely result in arrays having improved functional performance. These unexpected results support the non-obviousness of the claimed ranges of iodine concentrations. Thus, Applicants have met the burden of showing the claimed iodine concentrations are not obvious over Earhart, *et al.* in view of McGall, *et al.*

Reconsideration and withdrawal of the rejection are requested.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned at (978) 341-0036.

Respectfully submitted,

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MARKED UP VERSION OF AMENDMENTS

Claim Amendments Under 37 C.F.R. § 1.121(c)(1)(ii)

18. (New) The method of Claim 5, wherein from about 0.01 M to about 0.05 M iodine is present in the aqueous solvent mixture.
19. (New) The method of Claim 18, wherein from about 0.02 M to about 0.05 M iodine is present in the aqueous solvent mixture.